



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

App. No. : 09/603,247
Appellant : Raanan Liebermann
Filed : June 23, 2000
TC/A.U. : 2643
Examiner : Stella L. Woo

Confirmation No. 9739

#11

7/29/04

SL

Docket No. : 00-422RE
Customer No. : 34704

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313

RECEIVED

JUL 26 2004

Technology Center 2600

APPEAL BRIEF

Dear Sir:

This is an appeal to the Board of Patent Appeals and Interferences from the final rejection of the Primary Examiner in Group Art Unit 2643, dated January 27, 2004, finally rejecting claims 33 - 45 in the above-captioned reissue application.

REAL PARTY IN INTEREST

The real party in interest is the Appellant, Raanan Liebermann.

RELATED APPEALS AND INTERFERENCES

There are no related appeals or interferences known to Appellant, or Appellant's legal representative, which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

STATUS OF CLAIMS

Claims 1 - 46 are pending in the application. Claims 1 - 32 and 46 have been allowed and are not on appeal. Claims 33 - 45

stand rejected and are the claims on appeal. A copy of the claims on appeal are set forth in Appendix A attached hereto. A copy of the allowed claims not on appeal are set forth in Appendix B attached hereto.

STATUS OF AMENDMENTS

No amendment after final rejection was filed.

SUMMARY OF THE INVENTION

The claims on appeal relate to an electronic communication system for the hearing impaired. The system comprises a receiver for receiving spoken words and phrases and means for translating the spoken words and phrases into a visual form which may be observed by a hearing impaired person. The translating means includes means for transforming said spoken words into equivalent signing content and then into textual material. The system further comprises means for outputting the textual material for display on a device utilized by the hearing impaired person. The device used by the hearing impaired person includes means for receiving words and phrases from the hearing impaired person. The transforming means converts the words and phrases from the hearing impaired person into a form which may be presented to a hearing person. The system also has means for outputting the converted words and phrases from the hearing impaired person. (See column 4, line 60 to column 5, line 34; also see column 6, line 40 to column 7, line 43; also see FIGS. 1, 3, 5A, and 5C).

As pointed out in claim 34, the translating means may be located in a station remote from the hearing impaired person and the hearing person. (See the discussion about the Center in column 5, lines 1 - 2; also see FIG. 1)

As pointed out in claim 35, the means for receiving the words and phrases from the hearing impaired person comprises a video camera for capturing signing motions generated by the hearing impaired person. (See column 4, lines 60 - 61; also see FIGS. 1, 3, 5A, and 5C).

The system further has means for converting the captured signing motions into a plurality of identifiers and means for transmitting the plurality of identifiers to the translating means. The transmitting means may comprise at least one telephone line. The translating means may also include means for correlating the identifiers with a vocabulary and grammar database. (See column 4, line 64 to column 5, line 8; also see FIG. 1).

The translating means may include artificial intelligence means for providing an analysis of the emotional content of the spoken words. The system may include means for separately conveying the emotional content to the device utilized by the hearing impaired person (see column 6, lines 19 - 26; FIG. 7).

The device may have means for converting textual material received from the translating means into reduced identifying pointers and for converting the reduced identifying pointers into animated images which portray in sign language the content of the spoken words and phrases. (See column 5, lines 14 - 34).

As pointed out in claim 41, the device utilized by the hearing impaired person may be located in a kiosk (see FIG. 5C; column 5, lines 57 - 61).

As pointed out in claim 42, the device utilized by the hearing impaired person may comprise a portable transmitter/receiver (8) (see FIG. 6; see column 5, lines 62 to column 6, line 2).

As pointed out in claim 43, the device utilized by the hearing impaired person may be a personal computer (30) which includes a monitor (32) (see FIG. 5A; column 5, lines 53 - 55).

As pointed out in claim 44, the personal computer may include a video camera (34) for capturing facial, hand, and finger signing motions generated by the hearing impaired person (see FIG. 5A; column 5, lines 53 - 55).

As pointed out in claim 45, the output means may comprise means for transmitting the text via telephone lines and the device used by the hearing impaired person may include means for converting the transmitted text to animated images. (See column 5, lines 14 - 34).

PRIOR ART REFERENCES RELIED UPON

<i>Patent No.</i>	<i>Patentee</i>	<i>Issue Date</i>
5,659,764	Sakiyama et al.	August 19, 1997
5,163,081	Wycherley et al.	Nov. 10, 1992

REJECTIONS OF RECORD

1. Claims 33 - 45 have been rejected under 35 U.S.C. 251 as being an improper recapture of broadened claimed subject matter surrendered in the application for patent upon which the present reissue is based.

2. Claims 33, 35-36, 38, and 40 - 44 have been rejected under 35 U.S.C. 102 (b) as being anticipated by Sakiyama et al.¹

¹The final rejection issued on January 27, 2004 does not contain any rejection of claims 33, 35, 36, 38, and 40 - 44 on anticipation grounds. The Examiner does argue the rejection in the remarks section on pages 5 and 6 of the action. Rather than arguing that there is no such rejection in the final rejection, Appellant has chosen to respond as if the rejection were there in order to move the case along.

3. Claims 34, 37, and 45 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Sakiyama in view of Wycherley et al.

ISSUES

1. Was the subject matter of claims 33 - 45 surrendered during the prosecution of the patent upon which the instant reissue application is based?
2. Is the subject matter of claims 33, 35, 36, 38, and 40 - 44 disclosed in Sakiyama?
3. Is the subject matter of claims 34, 37, and 45 obvious over the combination of Sakiyama and Wycherley et al.?

GROUPING OF CLAIMS

With regard to the rejection under 35 U.S.C. 251, each of the claims is separately patentable and thus, the claims do not stand or fall together.

With regard to the rejection of claims 33, 35, 36, 38, and 40 - 44 on anticipation grounds, claims 33, 35, 43, and 44 stand or fall together. The remaining claims are each separately patentable and thus, the claims do not stand or fall together.

With regard to the rejection of claims 34, 37, and 45 on obviousness grounds, each claim is separately patentable and thus, the claims do not stand or fall together.

ARGUMENT

A. CLAIMS 33 - 45 AVOID RECAPTURE RULE

In the final rejection, claims 33 - 45 were rejected under 35 U.S.C. 251 as being an improper recapture of broadened claimed subject matter surrendered in the application for patent upon which the present reissue is based. The Examiner contends that during the original prosecution, the examiner issued an Office action rejecting independent claim 1 on prior art. The Examiner goes on to point out that Appellant amended independent claim 1 by further defining the video apparatus as "visually observing the images of facial and hand and finger signing motions of a deaf person and converting the observed signing motions into digital identifiers," further defining the means for translating as translating said digital identifiers of said observed signing motions into words and phrases." And further defining the means for outputting as "outputting said words and phrases generated by the visual observation of said signing motions in a comprehensible form to another person".

The Examiner goes on to point out that Appellant stated that "[t]he independent claims have ... been amended to clarify the unique operation and structure of the present invention. More particularly, each of the independent claims clearly defines the first step of the method or one component of the apparatus as visually observing the facial, finger and hand motion of the deaf person and converting those signing motions into digital identifiers which are then translated into words and phrases." The Examiner further points out that Appellant specifically argued that "[b]ecause of the technology employed by App[ellant] in the novel method, the full range of signing motions can be observed including hand motion, finger motion including interdigitation, body motion, lip motion and facial

motion... None of the prior art can approach the apparatus and method of the present invention from the standpoint of recognition of all these forms of signing activity." The Examiner contends that the subject matter previously surrendered in the application for the patent is a system without the following limitations: a video apparatus for visually observing the images of facial and hand and finger signing motions and converting the observed signing motions into digital identifiers, a means for translating said digital identifiers of said observed signing motions into words and phrases, and a means for outputting said words and phrases generated by the visual observation of said signing motions.

The Examiner contends that the limitations omitted in the newly added claims are the same limitations added by the Appellant for the purpose of obtaining allowance in the original prosecution and that Appellant is now precluded from capturing subject matter previously surrendered. In other words, the Examiner is asking the Board to impose a *per se* rule of reissue recapture to prevent Appellant from retreating from any claim limitation determined to have secured allowance of the original patent - a rule which the Board has rejected. See *Ex parte Eggert*, 67 USPQ2d 1716, 1717, 1723 (BPAI 2003).

It is submitted that the Examiner's analysis is flawed because the Examiner begins from the wrong point - the allowed claims. The analysis should have commenced with the rejected claims, not the allowed claims. See *Eggert*, 67 USPQ2d at 1718. ("In other words, the focus for determining the reach of the reissue recapture rule should be the claim from which the issued claim directly evolved, not the issued claim itself.")

As for the Examiner's contention about the arguments presented by Appellant in support of the amended claims which

were allowed, it is submitted that these arguments do not act as a surrender of the subject matter now being claimed in claims 33 - 45.

Finally, it is submitted that the rejection under 35 U.S.C. 251 is flawed because the Examiner has only analyzed the subject matter of independent claim 33 and has not conducted any analysis of rejected dependent claims 34 - 45. It is submitted that in a patent application, each claim defines a separate invention and thus, the Examiner must present an analysis of each claim because it is possible that while one claim may run afoul of the recapture rule, another claim may avoid the recapture rule.

Section 251 of the patent statute restricts reissue to situations in which an error occurred - situations that include the patentee having "claimed less than he had a right to claim in the patent." As noted in *In re Weiler*, 790 F.2d 1576, 1579, 229 USPQ 673, 675 (Fed. Cir. 1986), "[t]he statute is remedial in nature, based on fundamental principles of equity and fairness, and should be construed liberally." In the instant case, Appellant has found that he has claimed less than he was entitled to and has appropriately filed the instant application within the two year term for filing a broadening reissue application. It is also without contention that the error which arose was without any deceptive intent.

With regard to claim 33, the proper analysis begins with the claim (claim 1) which was rejected prior to the amendments which the Examiner concedes led to the allowance of the claim. Thus, Appellant turns to claim 1 as it appeared prior to the October 1, 1997 office action. The claim read as follows:

"1. An electronic communication system for the deaf comprising:

(a) a video apparatus for observing and digitizing the signing motions of a deaf person;

(b) means for translating the digitized signing motions into words and phrases;

(c) means for outputting said words and phrases in a comprehensible form to another person;

(d) a receiver for receiving spoken words and phrases of another person and transmitting them;

(e) means for translating said spoken words and phrases into a visual form which may be observed by the deaf person; and

(f) means for outputting said visual form of said spoken words and phrases on said video apparatus for viewing by the deaf person."

It is submitted that this is the subject matter which was surrendered by Appellant during the prosecution of the application which led to the patent which is undergoing reissue.

The recapture rule prevents a patentee from regaining through reissue the subject matter that he surrendered in an effort to obtain allowance of the original claims. *Mentor Corp. v. Coloplast, Inc.*, 998 F.2d 992, 995, 27 USPQ2d 1521, 1524 (Fed. Cir. 1996). As noted in *In re Clement*, 45 USPQ2d 1161, 1164 (Fed. Cir. 1997), the first step in applying the recapture rule is to determine whether and in what "aspect" the reissue claims are broader than the patent claims. The second step is to determine whether the broader aspects of the reissue claims relate to surrendered subject matter. To determine whether an applicant surrendered particular subject matter, one looks to

the prosecution history for arguments and changes to the claims made in an effort to overcome a prior art rejection. The recapture rule does not apply in the absence of evidence that an applicant's amendment was "an admission that the scope of that claim was not in fact patentable." See *Seattle Box Co. v. Industrial Crating & Packing, Inc.*, 731 F.2d 818, 826, 221 USPQ 568, 574 (Fed. Cir. 1984).

Claim 33 on appeal is broader than claim 1 in one respect and narrower in others. For example, claim 33 calls for "a receiver for receiving spoken words and phrases". This limitation is broader than limitation (d) in rejected claim 1 because it omits "of another person and transmitting them". It is submitted however that this difference is inconsequential because the omitted limitation was never asserted for reasons of patentability.

Claim 33 next calls for "means for translating said spoken words and phrases into a visual form which may be observed by a hearing impaired person." It is submitted that this is substantively identical to limitation (e) in rejected claim 1.

Claim 33 next calls for "said translating means including means for transforming said spoken words into equivalent signing content and then into textual material." It is submitted that this limitation is narrower than limitation (b) in rejected claim 1.

Claim 33 next calls for "means for outputting said textual material for display on a device utilized by said hearing impaired person." It is submitted that this limitation is narrower than limitation (f) in rejected claim 1 because it is directed solely to textual material being displayed. While the Examiner will likely argue about the omission of the phrase "video apparatus" in this portion of the claim, the substance of

the phrase is captured by new claim 33 which calls "for display on a device". Thus, the omission of the phrase is not a broadening of the claim.

Claim 33 next calls for "said device utilized by said hearing impaired person including means for receiving words and phrases from the hearing impaired person." This limitation substantively embraces the subject matter of limitation (a) in rejected claim 1. Appellant acknowledges that this limitation omits the phrase "digitizing the signing motions of a deaf person" and thus appears to be broader; however, such a perception as explained below is incorrect.

Claim 33 next calls for "said transforming means converting said words and phrases from the hearing person into a form which may be presented to a hearing person." It is submitted that this limitation is narrower than "digitizing" portion of limitation (a) in rejected claim 1 since it requires that the words and phrases be converted into a form which may be presented to a hearing person. It is also submitted that this limitation captures the essence of the "digitizing" portion of limitation (a).

Finally, claim 33 calls for "means for outputting said converted words and phrases from said hearing impaired person." This is substantively identical to limitation (c) in rejected claim 1.

It is submitted that claim 33 is much narrower than it is broader and it is narrower in a manner not directly pertinent to the subject matter that was surrendered during the prosecution of the application which led to the patent which is undergoing reissue.

It is also submitted that the arguments pointed to by the Examiner in the final rejection do not operate as a surrender of

the claimed subject matter. They are merely a regurgitation of the added claim limitations which led to the allowance and issuance of the patent.

The Examiner has not pointed to, and can not point to, any independent claim in the patent application which led to the patent on which this reissue is based of the same scope as claim 33. It is submitted that there was never a rejection of a claim directed to the novel and unobvious features of claim 33, namely the device used by the hearing impaired person to view a textual display also including means for receiving words from the hearing impaired person, because no claim of the same scope was ever presented. There never was a patentability argument presented in the patent application which led to the patent on which this reissue is based which argued the novel and unobvious features of claim 33, again because no claim of such scope was ever presented. Thus, there never was any surrender of the subject matter of claim 33.

When one considers the analysis presented above, one quickly reaches the conclusion that claim 33 is an intermediate claim that falls between the scope of allowed claim 1 and the scope of the rejected claim 1. It is submitted that claim 33 is narrower in all substantive aspects germane to the prior art rejection that led to the rejection of claim 1 and thus is narrower than the surrendered subject matter. As a result, the recapture rule does not bar the claim. See *Eggert*, 67 USPQ2d at 1726.

With regard to claim 34, it further narrows the subject matter of claim 33 by calling for the translating means being located in a station remote from the hearing impaired person. Thus, it too avoids the recapture rule.

With regard to claim 35, it relates to the word and phrase receiving means being a video camera. It is submitted that this too is a narrowing of any surrendered subject matter which avoids the recapture rule.

With regard to claim 36, this claim further narrows the subject matter of claim 33 by calling for the claimed converting means and thus also avoids the recapture rule.

With regard to claim 37, this claim further defines the transmitting means as comprising at least one telephone line. This too is a narrowing of any surrendered subject matter which avoids the recapture rule.

With regard to claim 38, this claim calls for the translating means to include means for correlating the identifiers with a vocabulary and grammar database. This also is a narrowing of any surrendered subject matter which avoids the recapture rule.

With regard to claim 39, this claim states that the translating means includes artificial intelligence means for providing an analysis of the emotional content of the spoken words. The claim also states that the system further comprises means for separately conveying the emotional content to the device utilized by the hearing impaired person. This is a substantial narrowing of any surrendered subject matter which avoids the recapture rule.

With regard to claim 40, this claims states that the device has a means for converting textual material received from the translating means into reduced identifying pointers and for converting the reduced identifying pointers into animated images. This is too is a substantial narrowing of any surrendered subject matter which avoids the recapture rule.

With regard to claim 41, this claim states that the device utilized by the hearing impaired person is in a kiosk. This is a narrowing of the surrendered subject matter which did not deal with the location of any device utilized by the hearing impaired person. Thus, the claim is narrower than any surrendered subject matter and avoids the recapture rule.

With regard to claim 42, this claim states that the device utilized by the hearing impaired person is a portable transmitter/receiver. This is a narrowing of any surrendered subject matter and thus avoids the recapture rule.

With regard to claim 43, this claim states that the device utilized by the hearing impaired person comprises a personal computer which includes a monitor. It is submitted that this claim is narrower than any surrendered subject matter and thus avoids the recapture rule.

With regard to claim 44, this claim states that the personal computer further includes a video camera for capturing facial, hand, and finger signing motions generated by the hearing impaired person. This claim is narrower than any surrendered subject matter because of the limitation that the personal computer includes a video camera. It is submitted that since this claim is narrower than any surrendered subject matter, it avoids the recapture rule.

With regard to claim 45, this claim calls for the output means to comprise means for transmitting text via telephone lines and for the device to include means for converting the transmitted text to animated images. It is submitted that this claim is a narrowing of any surrendered subject matter and thus avoids the recapture rule.

In conclusion, the claims on appeal are narrower than any surrendered subject matter and thus the recapture rule does not apply.

B. CLAIMS 33, 35, 36, 38, AND 40 -

44 ARE NOT ANTICIPATED BY SAKIYAMA

The Sakiyama et al. patent relates to a sign language generation apparatus and sign language translation apparatus. The Sakiyama et al. apparatus includes a microphone (1) for inputting a composition in voice language and a voice interface unit (2) for converting a signal sent from the microphone into a sentence recognizable by a computer. The apparatus further includes a keyboard (3) for inputting a composition in voice language and a keyboard interface unit (4) for converting the keyboard input into a sentence. A spoken language processing unit (5) performs an analysis of the inputted voice language composition, rearranging sign language words so that they meet a sign language-like expression and determining a display position of a sign language.

The Sakiyama et al. device has a sign language animation generating unit (6) where sign language word patterns are retrieved from a sign language word pattern storage device (10). Display (7) displays a sign language animation in the form of three dimensional color on the display screen.

A glove type sensor (8) is used by a person who wants to register sign language words. A glove type sensor interface unit (9) is provided for adding titles to data sent from the glove type sensor for registration in the storage 10.

The respective input units in Sakiyama et al. are connected to a computer (11). The computer stores various programs for carrying out the various data processing.

This first embodiment is shown in FIGS. 1A and 1B in Sakiyama et al. A second embodiment is shown in FIG. 22.

In the second embodiment, there is provided a video camera (21) for inputting sign language by an aurally handicapped person and a glove type sensor (22) for inputting motion of the hand in a sign language. A sign language recognition unit (23) is provided for recognizing sign language words from a portion of look and motion of the hand. A standard sign language pattern storage (24) and a sign language/voice language conversion unit (25) are provided. A display unit (27) is provided for indicating results of translation of sign language into voice language to an aurally normal person.

It is submitted that claim 33 as presented is allowable over Sakiyama et al. because the cited and applied reference does not disclose any "means for outputting textual material for display on a device utilized by a hearing impaired person" which device (containing said display) also includes "means for receiving words and phrases from the hearing impaired person". The outputting means in Sakiyama et al. is the monitor (7) which lacks any means for receiving words and phrases from the hearing impaired person. There is a microphone (1); however, it is used by a hearing person and does not form part of the monitor (7).

The Examiner's comments on pages 5 and 6 of the final rejection show that the Examiner is misreading the language of claim 33. Claim 33 clearly states that the system includes means for outputting textual material for display on a device utilized by the hearing impaired person. The only device in Sakiyama et al. which has a display for the hearing impaired person is the monitor (7). Claim 33 then goes on to say that the device having the display (not the system) includes means for receiving words and phrases from the hearing impaired person. While the Sakiyama

et al. system in FIG. 22 has a video camera and gloves for receiving input from the hearing impaired person, the camera and gloves do not form part of the monitor (7) and thus do not meet the included limitation of claim 33. In other words, they are not included in the display device utilized by the hearing impaired person. This is why claim 33 is allowable over Sakiyama et al.

Claim 35, 43 and 44 are allowable for the same reasons as claim 33.

Claim 36 is allowable because Sakiyama et al. does not disclose means for converting the captured signing motions into a plurality of identifiers and means for transmitting the identifiers to the translating means for translating spoken words and phrases into a visual form.

Claim 38 is allowable because Sakiyama et al. does not have means for correlating the identifiers with a vocabulary and grammar database.

Claim 40 is allowable because Sakiyama et al. does not have the claimed means for converting the textual material received from the translating means into reduced identifying pointers and for converting the reduced identifying pointers into animated images.

Claim 41 is allowable because Sakiyama et al. does not disclose providing a device utilized by a hearing impaired person in a kiosk.

Claim 42 is allowable because the Sakiyama et al. system does not include the claimed portable transmitter/receiver.

C. CLAIMS 34, 37, AND 45 ARE PATENTABLE

The Wycherley patent is cited by the Examiner as teaching the centralization of the translation process in order to

convert communications between an aurally normal person and a remotely located aurally impaired person over the telephone network. The Examiner contends that it would have been obvious to an artisan of ordinary skill to incorporate such remote communication and centralized translation within the system of Sakiyama et al. in order to allow communication between remote parties.

Claims 34, 37, and 45 are allowable because Wycherley et al. does not cure the deficiencies of the Sakiyama et al. patent noted above. At a minimum, these claims are allowable for the same reason that their parent claims are allowable.

Claim 34 is allowable because there is nothing in Wycherley et al. which would motivate one of ordinary skill in the art to locate any translating means in Sakiyama et al. in a station remote from the hearing impaired person and the hearing person. At best, Wycherley teaches having a portion of the telecommunications network remote from the people using it. Wycherley et al. contains no teaching with respect to the location of the translating means. Further, it should be noted that Sakiyama et al.'s system, which may be used as a communication system between a normal hearing person and a hearing impaired person, is not intended or designed to act as a telephone style communication system. It does not contain any telephone lines and why one would want to add them escapes Appellant.

Claim 37 is allowable because there is nothing in Wycherley et al. which would motivate one of ordinary skill in the art to provide Sakiyama et al. with a means for transmitting the plurality of identifiers to the translating means via at least one telephone line. Wycherley et al. does not teach transmitting a plurality of identifiers to a translating means. Again, it

should be noted that Sakiyama et al. is intended to be a device which is situated in a single location. Thus, there is no need to incorporate telephone lines into Sakiyama et al.

Claim 45 is allowable because while Wycherley et al. transmits text via telephone lines, one of ordinary skill in the art would not be motivated to include an output means which comprises means for transmitting the text via telephone lines in Sakiyama et al. Again, Sakiyama et al. is directed to a system to be used in a single location.

It is submitted that the Wycherley et al. system is very much different from Sakiyama et al.'s system. At best, Wycherley teaches that it is known in the art to provide telephone line communication between a hearing person and a hearing impaired person. However, the mere fact that this is known in the art is not enough to lead to a finding of obviousness. One can not incorporate Wycherley et al. into Sakiyama et al. because there are no telephone lines in Sakiyama et al. Even if one could incorporate the subject matter of Wycherley et al., Wycherley does not teach or suggest the specific limitations of claims 34, 37 and 45.

CONCLUSION

For the foregoing reasons, the rejections of claims 33 - 45 should be reversed and the application should be remanded to the Primary Examiner for allowance and issue.

EXTENSION OF TIME AND APPEAL BRIEF FEE

A petition for a one-month extension of time is enclosed herewith.

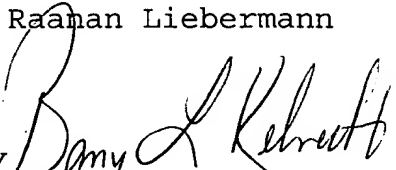
Also enclosed is a check in the amount of \$220.00 to cover the extension of time fee and the appeal brief fee is enclosed

herewith. Should the Commissioner determine that an additional fee is due, he is hereby authorized to charge said fee to Deposit Account No. 02 - 0184.

Respectfully submitted,

Raanan Liebermann

By



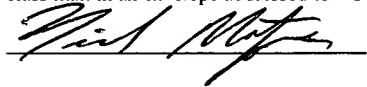
Barry L. Kelmacher
BACHMAN & LaPOINTE, P.C.
Reg. No. 29,999
Attorney for Appellant

Telephone: (203)777-6628 ext. 112
Telefax: (203)865-0297
Email: docket@bachlap.com

IN TRIPLICATE

Date: July 15, 2004

I, Nicole Motzer, hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: "Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313" on July 15, 2004.



APPENDIX A
Appln. No. 09/603,247

33. An electronic communications systems for the hearing impaired comprising:

a receiver for receiving spoken words and phrases; (d)

means for translating said spoken words and phrases into a visual form which may be observed by a hearing impaired person; (e)

said translating means including means for transforming said spoken words into equivalent signing content and then into textual material;

means for outputting said textual material for display on a device utilized by said hearing impaired person; (f)

said device utilized by said hearing impaired person including means for receiving words and phrases from the hearing impaired person; (a)

said transforming means converting said words and phrases from the hearing impaired person into a form which may be presented to a hearing person; and (b)

means for outputting said converted words and phrases from said hearing impaired person. (c)

34. An electronic communications system according to claim 33, wherein said translating means are located in a station remote from said hearing impaired person and said hearing person.

35. An electronic communications system according to claim 33, wherein said means for receiving words and phrases from said hearing impaired person comprises a video camera for capturing signing motions generated by said hearing impaired person.

36. An electronic communications system according to claim 35, further comprising means for converting said captured signing motions into a plurality of identifiers and means for transmitting said plurality of identifiers to said translating means.

37. An electronic communications system according to claim 36, wherein said transmitting means comprises at least one telephone line.

38. An electronic communications system according to claim 36, wherein said translating means includes means for correlating said identifiers with a vocabulary and grammar database.

39. An electronic communications system according to claim 33, wherein said translating means includes artificial intelligence means for providing an analysis of the emotional content of said spoken words and wherein said system further comprises means for separately conveying said emotional content to said device utilized by said hearing impaired person.

40. An electronic communications system according to claim 33, wherein said device has means for converting textual material received from said translating means into reduced identifying pointers and for converting said reduced identifying pointers

into animated images which portray in sign language the content of the spoken words and phrases.

41. An electronic communication system according to claim 33, wherein said device utilized by said hearing impaired person is located in a kiosk.

42. An electronic communication system according to claim 33, wherein said device utilized by said hearing impaired person comprises a portable transmitter/receiver.

43. An electronic communication system according to claim 33, wherein said device utilized by said hearing impaired person comprises a personal computer which includes a monitor.

44. An electronic communication system according to claim 43, wherein said personal computer further includes a video camera for capturing facial, hand, and finger signing motions generated by said hearing impaired person.

45. An electronic communication system according to claim 33, wherein said output means comprises means for transmitting said text via telephone lines and said device used by said hearing impaired person includes means for converting said transmitted text to animated images.

APPENDIX B
Appln. No. 09/603,247

1. An electronic communications system for the deaf comprising:

(a) a video apparatus for visually observing the images of facial and hand and finger signing motions of a person and converting the observed signing motions into digital identifiers;

(b) means for translating said digital identifiers of said observed signing motions into words and phrases;

(c) means for outputting said words and phrases generated by the visual observation of said signing motions in a comprehensible form to another person;

(d) a receiver for receiving spoken words and phrases of another person and transmitting them;

(e) means for translating said spoken words and phrases into a visual form which may be observed by a deaf person; and

(f) means for outputting said visual form of said spoken words and phrases on said video apparatus for viewing by the deaf person.

2. The electronic communications system in accordance with claim 1 wherein said another person is at a remote location.

3. The electronic communications system in accordance with claim 1 wherein said video apparatus includes a video camera and image capture and processing hardware and software.

4. The electronic communications system in accordance with claim 1 wherein said translating means is located at a central station with which said video apparatus and said receiver and outputting means are in communication.

5. The electronic communications system in accordance with claim 1 wherein said translating means also includes artificial intelligence for interpreting and converting the translated signing motions into words and phrases and into coherent sentences.

6. The electronic communications system in accordance with claim 5 wherein said outputting means converts said coherent sentences into synthetic speech.

7. The electronic communications system in accordance with claim 1 wherein said outputting means converts said spoken words and phrases into written form.

8. The electronic communications system in accordance with claim 1 wherein said video apparatus includes a display screen.

9. The electronic communications system in accordance with claim 8 wherein said video apparatus provides an output of said spoken words and phrases as signing motions on said display screen for viewing by the deaf person.

10. The electronic communications system in accordance with claim 1 wherein said video apparatus includes a display screen to provide an output of said spoken words and phrases as signing motions on said display screen for viewing by the deaf person, and wherein said video apparatus includes a microphone and speaker whereby a deaf person may communicate with another person in the immediate vicinity.

11. The electronic communications system in accordance with claim 10 wherein said translating means is located at a central station with which said video apparatus and said receiver and outputting means are in communication.

12. In a method for electronic communication for the deaf comprising:

(a) visually observing the images of facial and hand and finger signing motions of a person and converting the observed signing motions into digital identifiers;

(b) translating said digital identifiers of said observed signing motions into words and phrases;

(c) outputting said words and phrases in a comprehensible form to another person;

(d) receiving speech from said another person;

(e) translating said speech of said another person into signing motions; and

(f) displaying said signing motions representing said speech to a deaf person.

13. The electronics communications method in accordance with claim 12 wherein said another person is at a remote location.

14. The electronic communication method in accordance with claim 13 wherein said step of outputting at a remote location is effected by transmission of said translated words and phrases to a communications device receiver at said remote location.

15. The electronic communication method in accordance with claim 12 wherein said step of observing and converting the signing motions is effected by a video camera.

16. The electronic communication method in accordance with claim 12 including the step of transmitting said digital identifiers of said motions and said speech electronically to a central station where said translating steps are performed.

17. The electronic communication method in accordance with claim 12 wherein said outputting step provides such words and phrases as synthetic speech.

18. The electronic communication method in accordance with claim 12 wherein said outputting step provides said words and phrases in written form to said another person.

19. The electronic communication method in accordance with claim 12 wherein said displaying step provides said words and phrases in written form.

20. The electronic communication method in accordance with claim 12 wherein said translating step utilizes artificial intelligence.

21. The electronic communication method and software in accordance with claim 20 wherein said intelligence is developed with the use of multiple neural networks automatically created and assigned by gesture type.

22. The electronic communication method in accordance with claim 12 wherein said another person and said displaying step are at the same location as said deaf person and wherein said visually observing and converting step utilizes a video apparatus.

23. The electronic communication method in accordance with claim 22 wherein said receiver and outputting steps are conducted by components of an installation including said video apparatus.

24.: The electronic communication method in accordance with claim 22 wherein said translating steps are conducted at a remote center.

25. The electronic communication method in accordance with claim 12 wherein said translating steps are conducted at a remote center.

26. An electronic communication system for the deaf comprising:

(a) a video apparatus for visually observing the images of facial and hand and finger signing motions of a person and

converting the observed signing motions into digital identifiers;

(b) means for translating said digital identifiers of said observed signing motions into words and phrases;

(c) means for outputting said words and phrases generated by the visual observations of said signing motions in a comprehensible form to another person;

(d) a receiver for receiving spoken words and phrases of another person and transmitting them;

(e) means for translating said spoken words and phrases into signing motions which may be observed by a deaf person; and

(f) means for outputting said signing motions on said video apparatus for viewing by the deaf person, said translating means being located at a central station with which said video apparatus and receiver are in communication.

27. An electronic communications system for the deaf in accordance with claim 26 wherein said another person is at a remote location.

28. An electronic communications system for the deaf in accordance with claim 26 wherein said video apparatus includes a video camera and image capture and processing hardware and software.

29. An electronic communications system for the deaf in accordance with claim 26 wherein said translating means also includes artificial intelligence for interpreting and converting the translated motions into words and phrases into coherent sentences.

30. An electronic communications system for the deaf in accordance with claim 28 wherein said outputting means converts said coherent sentences into synthetic speech.

31. An electronic communications system for the deaf in accordance with claim 26 wherein said video apparatus includes a display screen.

32. An electronic communications system for the deaf in accordance with claim 26 wherein said video apparatus includes a display screen to provide an output of said spoken words and phrases as signing motions on said display screen for viewing by the deaf person, and wherein said video apparatus includes a microphone and speaker whereby a deaf person may communicate with another person in the immediate vicinity.

46. An electronic communication system for the hearing impaired comprising:

a receiver for receiving spoken words and phrases;

means for translating said spoken words and phrases into a visual form which may be observed by a hearing impaired person;

said translating means including means for transforming said spoken words into equivalent signing content and then into textual material;

means for outputting said textual material for display on a device utilized by said hearing impaired person;

said device utilized by said hearing impaired person including means for receiving words and phrases from the hearing impaired person;

said system including a video apparatus for visually observing any images of facial and hand and finger signing motions of the hearing impaired person and converting any observed signing motions into digital identifiers;

said transforming means converting said words and phrases from the hearing impaired person into a form which may be presented to a hearing person;

said transforming means including means for translating said digital identifiers of said observed signing motions into words and phrases;

means for outputting said translated words and phrases from said hearing impaired person; and

said outputting means including means for outputting said words and phrases generated by the visual observation of said signing motions in a comprehensible form to another person.